

TECHNICAL INFORMATION AND SERVICE DATA



Models 535-GA and 535-GAZ

FIVE VALVE, ONE BAND

A.C. OPERATED SUPERHETERODYNES

ISSUED BY

AMALGAMATED WIRELESS (A/SIA.) LIMITED



ELECTRICAL SPECIFICATIONS

FREQUENCY RANGE	540-1600 Kc/s (555-187.5 Metres)
INTERMEDIATE FREQUENCY	455 Kc/s
POWER SUPPLY RATING	200-260 volts, 50-60 C.P.S. (Models are produced with other voltage and frequency ratings.)
POWER CONSUMPTION	Receiver—48 watts Record Player—17 watts
DIAL LAMPS	6.3 volts, 0.25 Amp. M.E.S.

VALVE COMPLEMENT:

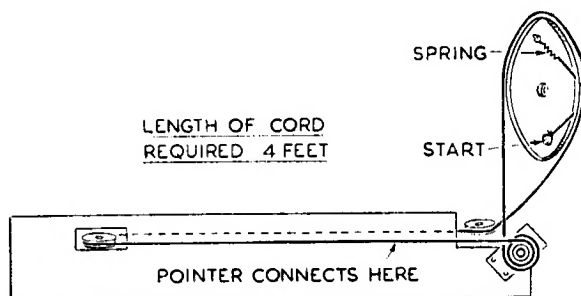
- (1) 6BE6 Converter
- (2) 6AR7GT I.F. Amp., Det., A.V.C.
- (3) 6AU6 A.F. Amp.
- (4) 6AQ5 Output
- (5) 6X4 Rectifier.

LOUDSPEAKER:

9" x 6" Permanent Magnet—Code No. BF11.
Transformer—TU301.
V.C. Impedance 3 ohms at 400 C.P.S.

Drive Cord Replacement.

The accompanying diagram shows the route of the cord and the method of attachment. The dial frame assembly must be removed before a new cord can be fitted.

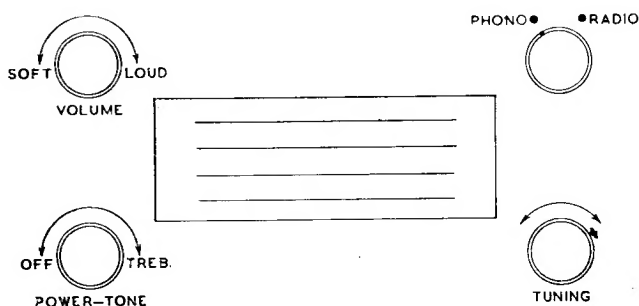


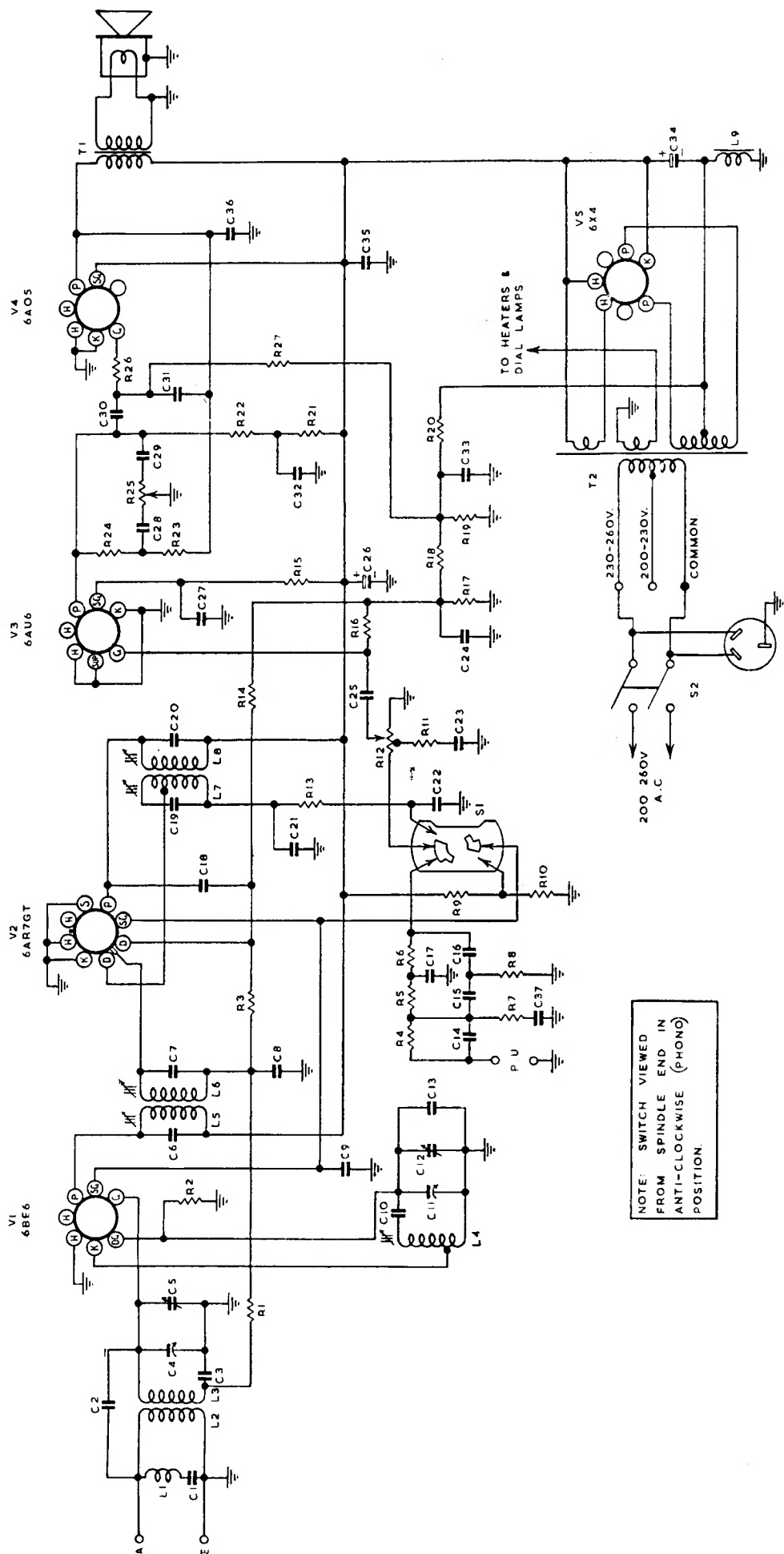
GENERAL DESCRIPTION.

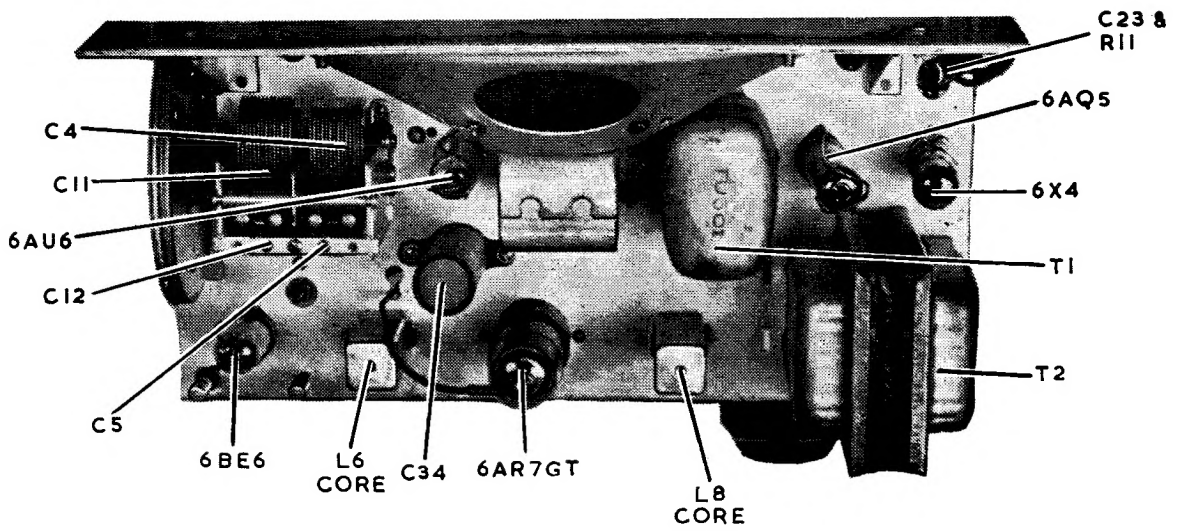
The models 535-GA and 535-GAZ are Table Radio-Phonograph combinations and features of their design include—Tropic-proof construction, automatic volume control, high permeability iron dust cores in I.F. transformers and oscillator coils, air-dielectric trimming capacitors, straight-line edge lighted perspex dial scales.

For the reproduction of phonograph recordings, Model 535-GA incorporates the Collaro electric phono-motor and pick-up unit, whilst Model 535-GAZ incorporates the A.W.A. electric phono-motor and pick-up unit.

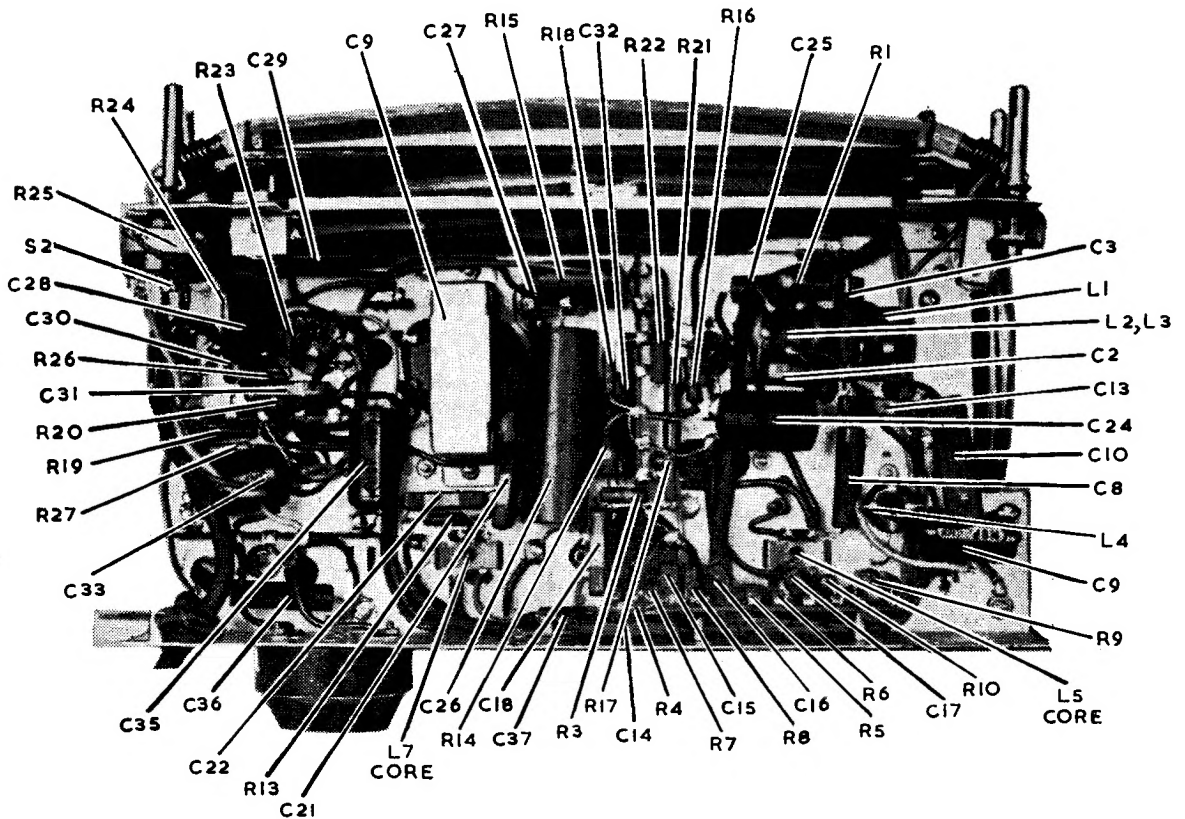
The Collaro and A.W.A. units are Rim Drive Constant Speed Units, which revolve the turntable at a constant speed for all recordings. They are available for both 50 C.P.S. and 40 C.P.S.



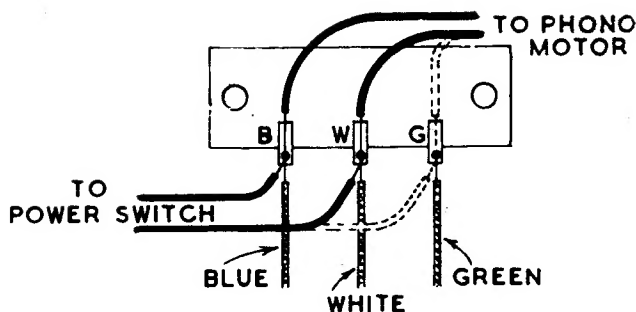




CHASSIS TOP VIEW MODEL 535-GA & 535-GAZ



CHASSIS UNDERNEATH VIEW MODEL 535-GA & 535-GAZ



Connection to Power Supply:

The receiver should not be connected to any circuit supplying other than alternating current from 200-260 volts and at the frequency stated on the label within the cabinet. The power supply connections are shown in the accompanying diagram.

Chassis Removal:

- (1) Remove the knobs by pulling them straight off their spindles.
- (2) Disconnect the Phono Motor and Pick-up cables.
- (3) Remove four screws from the top of the Phono-Motor board and withdraw the Phono Unit.
- (4) The chassis is held in the cabinet by four screws through the base. Removal of these enables the chassis to be withdrawn.

ALIGNMENT PROCEDURE.

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or, when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using special equipment.

For all alignment operations, connect the "low" side of the signal generator to the receiver chassis and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments.

- (1) A.W.A. Junior Signal Generator, type 2R3911, or
- (2) A.W.A. Modulated Oscillator, type J6726.
If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals of the instrument.
- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE

Alignment Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for maximum peak output.
1	Aerial Section of Gang (Rear portion)	455 Kc/s.	540 Kc/s.	L8 Core
2	Aerial Section of Gang (Rear portion)	455 Kc/s.	540 Kc/s.	L7 Core
3	Aerial Section of Gang (Rear Portion)	455 Kc/s.	540 Kc/s.	L6 Core
4	Aerial Section Gang (Rear portion)	455 Kc/s.	540 Kc/s.	L5 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s.	600 Kc/s.	L.F. Osc. Core Adj. (L4) *
6	Aerial Terminal	1500 Kc/s.	1500 Kc/s.	H.F. Osc. Adj. (C12)
7	Aerial Terminal	1500 Kc/s.	1500 Kc/s.	H.F. Aer. Adj. (C5)
Repeat adjustments 5, 6 and 7.				

* Rock the tuning control back and forth through the signal.

CIRCUIT CODE. RADIOLAS 535-GA & 535-GAZ

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.
L1	INDUCTORS		R26	50,000 ohms $\frac{1}{2}$ watt		C25	0.025 μ F paper 400 v. working	
L2, L3	I.F. Filter (including C1)	9382	R27	0.5 megohm $\frac{1}{2}$ "		C26	16 μ F 525 P.V. Electro-lytic	
L4	Aerial Coil 540-1600 Kc/s	7647A	C1	50 μ F silvered mica		C27	0.1 μ F paper 400 v. working	
L5, L6	Oscillator Coil 540-1600 Kc/s	15949	C2	4 μ F mica		C28	200 μ F mica	
L7, L8	1st I.F. Transformer	27351	C3	0.05 μ F paper 200 v. working		C29	0.005 μ F paper 600 v. working	
L9	2nd I.F. Transformer	27353	C4	12-430 μ F tuning	18671	C30	0.05 μ F paper 400 v. working	
	Filter Choke	TU17	C5	2-20 μ F trimmer (on gang)		C31	20 μ F mica	
R1	RESISTORS		C6	100 μ F silvered mica		C32	0.05 μ F paper 400 v. working	
R2	0.1 megohm $\frac{1}{2}$ watt		C7	100 μ F silvered mica		C33	0.4 μ F paper 200 v. working	
R3	20,000 ohms $\frac{1}{2}$ "		C8	0.05 μ F paper 200 v. working		C34	8 μ F 525 P.V. Electro-lytic	
R4	1.5 megohm $\frac{1}{2}$ "		C9	0.1 μ F paper 400 v. working		C35	0.1 μ F paper 400 v. working	
R5	0.1 megohm $\frac{1}{2}$ "		C10	470 μ F padder $\pm 2\frac{1}{2}\%$		C36	0.0025 μ F 600 v. working	
R6	0.3 megohm $\frac{1}{2}$ "		C11	12-430 μ F tuning	18671	C37	0.025 μ F paper 400 v. working	
R7	0.3 megohm $\frac{1}{2}$ "		C12	2-20 μ F trimmer (on gang)			TRANSFORMERS	
R8	50,000 ohms $\frac{1}{2}$ "		C13	4 μ F mica		T1	Loudspeaker Transformer	TU301
R9	0.15 megohm $\frac{1}{2}$ "		C14	0.0025 μ F paper 400 v. working		T2	Power Transformer	
R10	20,000 ohms 2 "		C15	100 μ F mica			50-60 C.P.S.	25803
R11	20,000 ohms 1 "		C16	100 μ F mica			40 C.P.S.	25805
R12	0.5 megohm Volume Control (Tapped at 40,000 ohms)	27145	C17	200 μ F mica			LOUDSPEAKER	
R13	50,000 ohms $\frac{1}{2}$ watt		C18	50 μ F mica			9" x 6" Permanent Magnet	8F11
R14	1.5 megohms $\frac{1}{2}$ "		C19	100 μ F silvered mica			SWITCHES	
R15	0.5 megohm 1 "		C20	100 μ F silvered mica		S1	Phono-Radio Switch	27417
R16	1.5 megohms $\frac{1}{2}$ "		C21	100 μ F mica		S2	Power Switch (on R25)	
R17	0.5 megohm $\frac{1}{2}$ "		C22	100 μ F mica				
R18	3.0 megohms $\frac{1}{2}$ "		C23	0.05 μ F paper 200 v. working				
R19	0.5 megohm $\frac{1}{2}$ "		C24	0.4 μ F paper 200 v. working				
R20	1.5 megohms 1 "							
R21	50,000 ohms 1 "							
R22	0.25 megohm $\frac{1}{2}$ "							
R23	0.63 megohm $\frac{1}{2}$ "							
R24	0.4 megohm $\frac{1}{2}$ "							
R25	1.0 megohm Tone Control (including S2)	26444						

VALVES		Bias Volts	Screen Grid to Chassis Volts	Anode to Chassis Volts	Anode Current mA	Heater Volts
6BE6	Converter	— 2.0*	66	256	0.7	6.3
6AR7GT	I.F. Amp., Det. A.V.C.	— 2.0*	66	256	2.7	6.3
6AU6	A.F. Amplifier	— 2.0*	60	35	0.8	6.3
6AQ5	Output	—15.0*	258	243	40	6.3
6X4	Rectifier (Cathode to centre top of transformer 300V)	—	—	290/290 A.C. R.M.S.	—	6.3

Total H.T. current 58 mA.

* Cannot be measured with ordinary voltmeter.

Negative volts across smoothing choke (L9) 65 volts.

Measured at 240 volts A.C. supply. No signal input. Volume control maximum clockwise.

Voltmeter 1000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.